

1 PUBLIC MEETING FOR  
2 WASTE AREA GROUP 2-TEST REACTOR AREA PROPOSED PLAN  
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10  
11 March 25, 1997

12 Shilo Inn

13 Idaho Falls, Idaho

14 7:00 p.m. - 9:20 p.m.  
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24 REPORTED BY: Linda Steffler

25 CSR No. T-169

PROCEEDINGS

## WELCOME / INTRODUCTION

BY REUEL SMITH:

MR. SMITH: Ladies and gentlemen, we will go ahead and start the meeting tonight. We are pleased you are here. We have some important and interesting projects to talk about tonight. We would like to recognize here, before we start, the presence of our Representative, Mr. Jack Barraclough. We appreciate you being here and recognize you have been a consistent commentor on these projects.

My name is Reuel Smith. I am the INEEL Community Relations Plan Coordinator. A lot of the activities that have occurred around this meeting, including the public notices, public briefings, have occurred in response to our Community Relations Plan that we have here for the Environmental Restoration Program. If any of you would like a copy of this document, just see me afterwards and we will make sure you get a copy.

The purpose of tonight's meeting is really threefold: We would like to provide you with information of the investigation that has been going on for about six years in the Test Reactor Area, what we call Waste Area Group 2. We would like to have an opportunity for you to ask questions and interact with the project managers and the agency

1 representatives. We want to have a chance to listen to the  
2 things that are important to you and we encourage and invite  
3 you to participate by offering comments and suggestions  
4 about this proposed plan.

5 We have a court reporter with us here tonight who  
6 will be recording all portions of this meeting and I will  
7 talk a little bit later about how we will break the meeting  
8 up into different parts.

9 The specific purpose of the meeting is to talk about  
10 this proposed plan on Waste Area Group 2. Some of you may  
11 have come with different issues on your mind about the INEEL  
12 you may have read or heard in the paper, maybe in the past  
13 or quite recent, and if you have some comments or critiques  
14 or suggestions you would like to offer to the Department of  
15 Energy, we have a general comment form over here at this  
16 table (indicating). It's a blue form and we would be glad  
17 to capture any of those thoughts and ideas you have on other  
18 INEEL issues.

19 I would just like to draw your attention to the table  
20 over here and let you know there are some background  
21 materials here, Records of Decisions from previous  
22 activities that occurred in this Test Reactor Area,  
23 including two former actions at the Test Reactor Area. This  
24 meeting tonight constitutes the 15th time we have taken a  
25 proposed plan out for public comment . This is the first  
comprehensive investigation. There will be eight other

1 investigations that will be coming out for public review.  
2 You can see there is a cluster of them coming up later this  
3 year, about three in 1999, and the last in the year 2000.  
4 So that gives you a little perspective of how we are  
5 proceeding and how things will go here in the future with  
6 these investigations.

7 I would like to just refer you to our display in the  
8 back also. It has a summary of the status of these  
9 different investigations, including the action that has been  
10 taken at each one of those different sites. One quick note  
11 about the proposed plan and the fact sheet that you possibly  
12 received in the mail. For the first time the Department of  
13 Energy and the INEEL convened a focus group that actually  
14 reviewed the documents, so many of the changes and  
15 improvements you see in this document and fact sheet are  
16 really attributable to those citizens that participated in  
17 the focus group. We would just like to recognize them for  
18 that.

19 With that, we would like to introduce those that are  
20 here representing the agencies who are participating here  
21 tonight. First, I would like to turn the time over to Nolan  
22 Jensen, the Acting Manager of the Environmental Restoration  
23 Program at DOE

24 MR. JENSEN: Thank you and, again, I would  
25 just like to welcome you out tonight. This is the first  
public meeting we have done in a couple of years so I may be

1 a little rusty.

2 I see some of you here tonight who have been involved  
3 in some of our projects. In 1989 it was placed on the  
4 National Priorities List, so the INEEL, at that time ,  
5 became a Superfund site.. at that time we signed an  
6 agreement with the EPA and the State of Idaho on how we  
7 would manage investigation and cleanup at the various  
8 potential contamination sites. And, tonight, as we do  
9 most everything under this agreement, we work very closely  
10 with EPA and the state, on coming up with investigation  
11 plans and now with cleanup plans.

12 I would like to introduce tonight, first, Jean  
13 Underwood, with the Idaho DEQ, and Rick Poeton with the EPA  
14 in Seattle, and I will turn the time over to them.

15 MS. UNDERWOOD: My name is Jean Underwood.  
16 As Reuel and Nolan have alluded to , we are bringing you  
17 information on the WAG-2 or Waste Area Group 2 Remedial  
18 Investigation/Feasibility Study (RI/FS) and I wanted to  
19 mention that the State of Idaho believes that the preferred  
20 remedial alternatives for eight of the 55 sites concerned at  
21 WAG-2, that those constitute what we feel is the best  
22 overall approach for those sites. Furthermore, we concur  
23 with the No Further Action recommendation for the remaining  
24 47 sites and the only other thing I wanted to add was that  
25 we value your participation in this process and we encourage  
you to not hold back with any comments or suggestions you

1 have.

2 I will turn the time over to Rick Poeton.

3 MR. POETON: My name is Richard Poeton and  
4 I am here for the Environmental Protection Agency. A couple  
5 of important points have already been mentioned. I will  
6 just reiterate them. This plan represents a joint effort  
7 with the State of Idaho, Department of Energy and the EPA  
8 and so recommendations in the plan are recommendations from  
9 all three of us..

10 Another point is that this is a comprehensive plan,  
11 the first in a series and what that means is it is an  
12 attempt to evaluate the Test Reactor Area as a complete site  
13 and take into account all actions and previous  
14 investigations in that evaluation.

15 The third thing I think I would just like to  
16 highlight is that this is a proposed plan and what that  
17 means is that the preferred alternatives in the plan are  
18 recommendations at this point and the final decisions on the  
19 Test Reactor Area will depend in large part on the community  
20 response to those recommendations and the comments we get  
21 back. So I would like to thank you all for coming and  
22 encourage you to let us know what you think.

23 MR. SMITH: Thank you, Rick.

24 I would also like to note that we have students with  
25 us tonight from one of the classes at the University and we  
appreciate you being here and we encourage your

1 participation in this meeting also.

2       If you don't mind, I would just like to review the  
3 agenda. We will have an overview of the proposed cleanup  
4 plan and Nolan Jensen from the Department of Energy and Adam  
5 Owen will be a tag team in that presentation and if, during  
6 that presentation, something is not clear, please raise your  
7 hand and ask a question of clarification and we will take a  
8 moment and clarify things so that it is understandable as we  
9 run through the presentation.

10       If you have concerns or issues that you would like to  
11 raise of things you hear in the presentation or things you  
12 have read in the plan, we would encourage you to take some  
13 note cards and make some notes to yourself, and after the  
14 presentation there will be a session where we will have  
15 questions and answers. It is really an informal time that  
16 any questions you have about the project is fair game and  
17 with the state EPA here and the Department of Energy and the  
18 Lockheed Martin project managers -- if we can't answer your  
19 question tonight, we will get back to you in some fashion.

20       So, after that question and answer session, we will  
21 take a brief break and we will be changing tapes on the  
22 recorder and then we will come back and have a public  
23 comment session and there will a few instructions about that  
24 but we will hold off on that until that time.

25       Are there any questions about the agenda and how we  
will proceed tonight? (No audience response) Okay. With

1 that, we will turn the time over to Nolan Jensen.

2 I am going to be your advocate tonight. If you hear  
3 some acronyms that you are unfamiliar with, I will raise my  
4 hand and ask them to define the acronym. If you see  
5 something that is not clear, please let us know.

6 By the way, would anybody like some note cards to  
7 begin with? I have some extra paper too, if you would like.

8 MR. JENSEN: Like Reuel said, Adam Owen and  
9 I will be tag teaming this presentation.

10 What we are going to do is talk about a general  
11 summary of the investigation as a whole. That will take  
12 about 30 minutes. We know we can't give you the whole story  
13 in that amount of time, but I am sure you will get enough  
14 information that you can understand why we are doing the  
15 things that we are proposing and give you enough information  
16 that you can ask questions to follow it up if you would  
17 like.

18 Whenever we do a Remedial Investigation/Feasibility  
19 Study, we are asking three very basic questions. No. 1,  
20 what is out there in terms of releases of hazardous  
21 substances. The second one is how bad is it and the third  
22 one is how are you going to deal with it, how are you going  
23 to clean it up. Hopefully, tonight we will touch on each of  
24 those three things.

25 I am going to start out with generally an overview of  
the Test Reactor Area, which we lovingly call Waste Area

1 Group 2. I will let you know generally the kind of sites  
2 that are out there. We are going to talk about the risk  
3 assessment and we will answer the question of how bad that  
4 is and we will also talk about some of the alternatives that  
5 we evaluated for cleanup and I will come back up and talk  
6 about what we are proposing in terms of cleanup.

7 So, I would like to start off again -- I know many of  
8 you are familiar with the INEEL -- but the Test Reactor  
9 Area, what we call Waste Area Group 2 -- the Chem Plant,  
10 right here, as many of you are familiar with it and it's in  
11 the south central part of the INEEL.

12 This next slide is a photograph of the Test Reactor  
13 Area, and we are looking to the west here. This is an in-  
14 line disposal pond that has been here for about three years  
15 here on the east side of the facility. The facility is  
16 around 70 acres. The main purpose of this facility is to  
17 operate test reactors and the normal -- or the main function  
18 of those reactors has been to test different materials and I  
19 believe most of those are being tested for the Department of  
20 Defense for use in submarines, aircraft carriers and that  
21 kind of thing.

22 There have been three major complexes with this  
23 facility. The first is the Engineering Test Reactor, which  
24 is in this area here and the Materials Test Reactor, which  
25 is in this area right here. and both of those facilities are  
now shut down and no longer operating. The reactor that is

1 still operating is the Advance Test Reactor and that will  
2 operate -- I don't believe there are any current plans for  
3 when that will shut down.

4       Being an industrial complex like that, there are many  
5 common things out there that we are dealing with. We have  
6 storage tanks that have contained gasoline, transformers  
7 that have had PCB's in this and some oil spills, gasoline  
8 spills, acid spills and there are construction rubble piles  
9 and that sort of thing, but probably the biggest concern,  
10 the biggest issue that we are dealing with the Test Reactor  
11 Area is the disposal of radioactive wastewaters and that has  
12 to do with some of the ponds on this side of the plan and we  
13 will talk about that in more detail later.

14       As we started the investigations about, oh, gosh, six  
15 or seven years ago, we identified, at that point -- between  
16 then and now -- about 55 sites, and the next slide is just a  
17 plot plan of Test Reactor Area, and I know you can't see  
18 these really well, but these tan colored spots are all of  
19 the 55 sites that we identified that needed some  
20 consideration or looking into. And, again, these blue areas  
21 are the disposal ponds on the east side that I mentioned  
22 earlier.

23       So, out of those 55 sites, we started the  
24 investigations and the next slide generally shows some of  
25 the types of sites. This is just a construction rubble  
pile. That gives you one example. There were several of

1 those that we looked at. This is one of the transformers  
2 that contained PCB's and we had four or five of those that  
3 we looked at. This is a location right here where we looked  
4 at an underground storage tank that held fuel for a  
5 generator. This is a tank that has held, basically, acidic  
6 and toxic wastewater and there is a potential for leakage  
7 there so we had to consider that to see if there are any  
8 problems.

9       This was an old loading dock and they brought in  
10 solvents, oils, that kind of thing and they were stored on  
11 the loading dock. It is, obviously, no longer there but the  
12 concern was that there might be spills in that area that we  
13 needed to clean up.

14       There are three reactors, like I mentioned, and each  
15 of them had a cooling tower and cooling towers historically  
16 used chromium as a rust inhibitor and an algicide and so the  
17 potential for a release of chromium associated with those  
18 cooling towers was the reason that we looked at those.

19       This was a -- basically you can see the tank in the  
20 background here -- this was a valve and the trucks would  
21 bring in the fuel and hook up their hoses to the valve here  
22 to fill the tanks and there has been some leakage and things  
23 associated with that that we needed to take a look at on  
24 this particular site. So that gives you a very general feel  
25 of the kind of sites that we are looking at. I don't think  
that there are any things that are that unusual other than

1 the disposal ponds but we did look at most of those. As a  
2 result of the investigations, we basically came up with  
3 three different overall actions that we have taken at this  
4 point.

5 One is that many of these sites are pretty innocuous  
6 looking and in reality many of them are so for a number of  
7 sites we reached a determination -- again, with EPA and  
8 state concurrence -- that there is probably no need to look  
9 at those sites any further.

10 There were a couple of quite significant  
11 investigations that we did. One was the Warm Waste Pond and  
12 that was a pond, a three-cell pond, about 4 1/2 acres, where  
13 radioactive wastewater was disposed and as a result of that  
14 -- we can look over here -- this is the warm wastewater here  
15 -- and what happened was this radioactive wastewater was put  
16 into the pond and being an unlined pond that radioactive  
17 wastewater seeped into the subsurface. The Snake River  
18 Plain Aquifer is about 480 feet. As the water percolated  
19 down it encountered -- there is one major interbed,  
20 sedimentary interbed -- that slows down the downward  
21 movement of the water and it created what we call a perched  
22 water zone there and so one of our investigations was to  
23 evaluate the risk of that contaminated water being there.  
24 The result of that, plus an injection well, was that there  
25 was contamination in the aquifer and we wanted to look at  
that. The result of that investigation was that no action

1 was necessary. However, we are continuing to monitor the  
2 water to make sure the contaminant levels remain low.

3 The other problem is that the water was put into the  
4 pond and some of the contaminants stayed in the sediments  
5 and the sediments themselves became a hazard problem so what  
6 we did -- and that's this one right here -- what we did  
7 there was to consolidate the sediment in these three cells  
8 of the pond into about half the area and put a temporary  
9 soil cover over those.

10 And now, tonight, what we are talking about is after  
11 those -- after we completed all of those preliminary  
12 investigations -- now we are stepping back and doing what we  
13 call a Comprehensive Remedial Investigation/Feasibility  
14 Study and what that is is stepping back and looking at the  
15 facility as a whole and determining if there are things that  
16 we missed or things that we need to consider differently  
17 and looking at the whole picture rather than each individual  
18 site.

19 Tonight, this is the last investigation planned for  
20 TRA and we are -- again, this is the Big Kahuna as far as  
21 making cleanup decisions there.

22 This is just a photograph of the Test Reactor Area  
23 Warm Waste Pond while we were doing the soil consolidation  
24 project there.

25 This next picture is a -- I see someone that looks  
like they are in the audience here -- this is a picture of

1 some of the monitoring that we are doing of the perched  
2 water.

3 Out of all of those 55 sites, there are eight -- if  
4 you read the proposed plan -- there are eight of all of  
5 those sites that we believe cleanup is necessary because the  
6 risk is not acceptable and those are the Chemical Waste  
7 Pond, the sewage lagoons -- there is an area also around the  
8 sewage lagoons where there is some radioactive contaminated  
9 soil -- the Warm Waste Pond that I just talked about. This  
10 is the Cold Waste Pond. No contaminated water is going in  
11 there but there is some radioactive contamination we found.  
12 Our best guess is that it is dust that blew out of this pond  
13 before we did the preliminary cleanup there. And then there  
14 are three sites within the facility boundaries that are  
15 associated with leaks in pipes and underground tanks.

16 So, I will now turn the time over to Adam Owen.  
17 Hopefully, what I have done here is give you a feel for what  
18 is out there and Adam will talk about the risk assessment.

19 AUDIENCE MEMBER: Is the retention basin a  
20 part of your concern?

21 MR. JENSEN: We did look at the retention  
22 basin and that is not one of the sites that we are proposing  
23 action at.

24 MR. OWEN: Thank you, Nolan.

25 Good evening. I would like to welcome you all this  
evening here and encourage you that if at any time during

1 the presentation you have questions or comments, I will try  
2 to address those at that time.

3 Before I get started, I would like to acknowledge a  
4 couple of people instrumental in developing the RI/FS report  
5 and the proposed plan: Doug Burns, who is our risk assessor  
6 and John Keck, who wrote the feasibility study and did the  
7 evaluations and Shannon, who was very helpful in providing  
8 support for this overall project.

9 MR. SMITH: Adam, would you define RI/FS  
10 for those that may not know?

11 MR. OWEN: RI/FS stands for Remedial  
12 Investigation/Feasibility Study. Essentially, the RI part  
13 of that includes evaluation of the sites and what the risk  
14 is at those sites. The FS is now that you know the sites  
15 have a risk, what are you going to do about it. The whole  
16 report is condensed into that 36-page plan that most of you  
17 have.

18 The sites that were on those slides we categorized  
19 into categories and they include the disposal ponds, which  
20 include the Chemical Waste Pond, the Sewage Leach Pond and  
21 the Warm Waste Pond. We have also got a category for  
22 subsurface release sites. Those are the three pink colored  
23 ones that were inside the perimeter fence at the Test  
24 Reactor Area. We have also got a category for windblown  
25 contamination. Primarily that is that area east of the Test  
Reactor Area. We have also got a couple of other categories

1 that we have touched on briefly tonight. Those include the  
2 groundwater where we have tritium and chromium contamination  
3 and also the 47 other remaining sites that we are  
4 recommending for No Further Action.

5       Essentially, in these areas, the disposal ponds have  
6 metals and radioactive contaminated soil.  
7 In subsurface sites mainly we are talking about radioactive  
8 contaminated soil, as well as the windblown sites and,  
9 again, in the groundwater we have chromium, which is a metal  
10 and tritium, which is a radioactive constituent.

11       This slide shows a short list of those contaminants  
12 we believe could cause a potential adverse health effect if  
13 anybody were to be exposed to them. Of this short list, we  
14 have identified several highlighted here that we are  
15 concerned with most: cesium 134 and 137, mercury, cobalt 16  
16 and europium isotopes are those that we are talking about.

17       Now, in order for us to assess the risk at a site, we  
18 have to have three things: One, we have to have a source of  
19 contamination; we have to have a mechanism by which that  
20 contamination can get to somebody and that is called a  
21 pathway and we have to have a receptor that has received  
22 some kind of exposure to that contamination.

23       Now, a risk assessment is evaluated for two different  
24 scenarios: An occupational worker that may be working at  
25 the site or someone who may be living at the site at some  
point in the future and we consider that point for an

1 assumption that a hundred years from now it is possible that  
2 a residential receptor could build a home on this site and  
3 live there and so we have evaluated the risk under that  
4 scenario for the pathways and you can see that for the  
5 occupational and residential scenarios, we have looked at  
6 soil ingestion, dust inhalation, skin contact and direct  
7 radiation exposure. Those were a few of those. In  
8 addition, for the residential scenario only, we looked also  
9 at groundwater ingestion, ingestion of homegrown produce,  
10 inhalation of water vapors. All of those scenarios were  
11 evaluated for this risk assessment.

12 I want to make a couple of clarifications here. When  
13 we perform a risk assessment, we call it a baseline risk  
14 assessment. The assumption in performing that risk  
15 assessment is that if you were to, for whatever reason, walk  
16 away from the site and leave it as it is today, without  
17 doing anything, what would be the risk for a person that is  
18 exposed under this occupational scenario or a person who  
19 might be exposed under the residential scenario, what is the  
20 risk to that individual under that exposure.

21 So, it is important to recognize that DOE hasn't  
22 walked away. We have control measures in place now to  
23 protect our workers out there, so when you see a risk for an  
24 occupational worker, remember, that's as if there aren't any  
25 of these controls in place and people can go out there and  
dig or do whatever they want, wherever they want.

1           The other thing that I want to mention is that  
2 ecological risk is also performed and evaluated the risk to  
3 ecological receptors -- plants and animals at the site --  
4 and in general the results of that showed that those actions  
5 -- for those areas where there is a human health risk, there  
6 is also an ecological risk.

7           However, any measures that we take to protect the  
8 human health also protects those ecological receptors. We  
9 have three sites where we have risk to ecological receptors  
10 but we do not have a risk to human receptors. Those areas  
11 are within the boundary of the Test Reactor Area and because  
12 of the nature of the operations -- the site itself, where  
13 you have got workers and you have got trucks and you have  
14 got an industrial scenario, those conditions really don't  
15 promote ecological receptors such as the animals and the  
16 deer and rabbits being in close proximity with those  
17 contaminants. So, the measures we have got in place are  
18 protective there.

19           The bigger picture, on the WAG prospective -- the  
20 bigger picture there, the INEEL as a whole will be evaluated  
21 and populations of ecological species will be evaluated to  
22 determine what the effect of exposure to these contaminants  
23 is on the population as a whole.

24           The trickiest part of my presentation -- after this  
25 risk assessment is conducted, each site has a calculated  
risk number. The guidance tells us that if a risk number

1 falls below this line (indicating), then that is considered  
2 an acceptable risk. When you perform a risk assessment and  
3 the number falls between this line, that is also considered  
4 an acceptable risk but it is within the range where there  
5 are also some other conditions or other factors that need to  
6 be evaluated and the agencies have the flexibility to  
7 evaluate these considerations and recommend cleanup of some  
8 type, if necessary. So, that is sites that fall within this  
9 range.

10 If, after the risk assessment, that number falls  
11 above this line, then the guideline tells us that is not  
12 acceptable and that something has got to be done. This  
13 slide shows those sites that present an unacceptable risk  
14 for present day workers. You can see, relatively speaking,  
15 the higher you go up on this graph, so to speak, the greater  
16 the risk. At TRA-19 and the Brass Cap Area -- this is 19  
17 and this is the brass cap -- present the greatest risk to  
18 occupational workers. At the bottom is borderline, but it  
19 is still unacceptable, TRA-15 and the Sewage Leach Pond,  
20 also are in that unacceptable range. This is 15 and this is  
21 the Sewage Leach Pond (indicating).

22 We have this category of groundwater in this present  
23 day occupational exposure. Exposure to the contaminants in  
24 the groundwater to our workers -- let us recognize that  
25 chromium and tritium today exceed safe drinking water  
standards.

1       We have a similar slide only we are 100 years in the  
2 future now. If we were to do nothing at the Test Reactor  
3 Area, these are the sites that would still pose an  
4 unacceptable risk.

5       You can see that TRA-19 and the Brass Cap Area still  
6 have the highest risk, followed by the Warm Waste Pond, the  
7 Sewage Leach Pond and the Cold Waste Pond. You might wonder  
8 what happened to these other sites. Well, at those sites,  
9 natural and radioactive decay drops that risk number into an  
10 acceptable range. That's why those went away.

11       And, also, you notice that for the groundwater, we  
12 have written here, no unacceptable risks predicted. The  
13 reason we say that is because our computer modeling shows  
14 that through radioactive decay and the dispersion processes,  
15 those two contaminants in drinking water will be acceptable  
16 within 20 years. So, certainly but a hundred years from now  
17 we don't predict that there will be any problem.

18       There is another category here that I want to  
19 recognize really quickly. Risk -- when I say risk, that is  
20 the probability that exposure to these contaminants would  
21 result in cancer. There is another category that could no  
22 necessarily cause cancer, but could cause an adverse toxic  
23 health effect that is unacceptable. There are two sites  
24 that fall into that category: the Sewage Leach Pond and the  
25 Cold Water Waste Pond. The contaminant happens to be  
mercury for those two sites. For those sites, after we

1 performed the risk assessment, showed that we had an  
2 unacceptable, adverse health effect risk so we needed to  
3 consider them.

4 I hope that answers the question of how bad these  
5 sites are. Now, remedial action objectives guide decisions  
6 that will satisfy the goals of protecting and helping the  
7 environment. We have to have some way to measure whether or  
8 not we will meet those goals. We have written some remedial  
9 action objectives that we will use to determine whether or  
10 not we are protective or not, and you can see, in general,  
11 they include inhibit direct exposure, ingestion of soil and  
12 groundwater, contaminants that could get us into that  
13 unacceptable risk range. If we were to build some kind of  
14 containment structure at any of these sites, we want to make  
15 sure that that cover continues to be maintained and  
16 protective and effective toward inhibiting any exposure to  
17 those contaminants.

18 For the environment, we want to inhibit adverse  
19 effects to plants and animals. If we are to leave any  
20 contaminants at the site, we want to make sure that those  
21 sites aren't migrating in some fashion to the surface or to  
22 a point that someone could be exposed such that they would  
23 fall within that unacceptable range.

24 These are our objectives that we will use to evaluate  
25 whether or not we were successful in whatever action we will  
be taking at these sites.

1           Now, many alternatives were evaluated in the  
2 feasibility study and we have narrowed it down to these five  
3 alternatives that were evaluated against these very  
4 criteria. By law, we are required to evaluate these  
5 criteria against -- these alternatives against these  
6 criteria -- and you can see that we are at this point right  
7 here (indicating), so this is important to us. We need to  
8 know what you think of what we are proposing tonight.  
9 That's why we are here.

10           So, I will just briefly go over the five. They  
11 include: No Action (with Monitoring); Limited Action;  
12 Containment and Institutional Controls; Excavation,  
13 Treatment, and Disposal; Excavation and Disposal. In the  
14 next couple of slides we will discuss those.

15           No Action with monitoring is required by law and it  
16 is used for comparative purposes for the other alternatives.  
17 It involves essentially no active removal of contaminated  
18 media but there is ongoing monitoring for air, soil and  
19 groundwater every year for at least the next 100 years.

20           The Limited Action, or what we call institutional  
21 control -- you probably read that in the proposal --  
22 involves not only the monitoring we talk about here, but  
23 those current management control practices we have ongoing  
24 at the site to protect our workers will continue to be  
25 implemented and those consist of access restrictions, deed  
restrictions, maintenance of the area to make sure that

1 those restrictions remain in place -- and that will occur on  
2 a routine basis and will occur every year for at least 100  
3 years.

4       Alternative No. 3, Containment and Institutional  
5 Controls. The idea there, of course, is to contain the  
6 contaminant in place so that receptors are not exposed at  
7 the site. We have looked at two alternatives in general,  
8 which has already been used at the site at the SL-1,  
9 containment with an engineered cover, and I have got a slide  
10 that will show you a cartoon of what those look like, but  
11 essentially it consists of layers of cobbles and gravels and  
12 then covered by a larger, basalt, rip rap type of a cover.  
13 The other alternative we looked at, containment cover, is a  
14 native soil type of a cover, shown on the next slide. You  
15 can see for the native cover we have got a contaminated area  
16 here. The containment, again, consists of gravels, cobble,  
17 gravel layer, followed by this larger basalt rip rap that  
18 will be placed on top to prevent somebody from digging in  
19 that area sometime in the future. The soil cover, again in  
20 this contaminated area here, consists of 10 feet of clean  
21 native soil material that would be placed over this and then  
22 we would put some type of vegetative cover on top.

23       Alternative No. 4, Excavation, Treatment, and  
24 Disposal, consists of excavating contaminated soil. This  
25 specific alternative is specific only to the chemical waste.  
In the Sewage Leach Pond we have mercury contamination. If

1 it was determined that the level of mercury at the Chemical  
2 Waste Pond exceeded what we consider a hazardous level,  
3 there is a certain concentration above which you are  
4 required by law to treat that waste. So, it consists of  
5 excavation of that contaminated material, treatment by  
6 mercury retort system, which is essentially you take the  
7 contaminated soil and you heat it to 1000 degrees or so, to  
8 unlock the mercury and separate it in that way and dispose  
9 of it properly and then, of course, the disposal costs  
10 include transportation and removal of this waste to an  
11 approved disposal facility.

12 The fifth alternative is Excavation and Disposal and  
13 it consists of excavation of contaminated material and  
14 disposal to an approved location, on-site or off-site.

15 I hope that answers the question of how bad our  
16 problem is out there and some of the alternatives that we  
17 are recommending for dealing with that problem. Are there  
18 any questions at this point?

19 AUDIENCE MEMBER: When you talk about  
20 mercury, are you talking about -- what form is that mercury  
21 in? Is it inorganic or --

22 MR. OWEN: We are assuming it is in  
23 elemental type of mercury. The second half of that story is  
24 that we have a limited amount of data on the type of mercury  
25 that are out there. Now, part of this alternative consists  
of going out there and taking some additional samples to

1 define specifically what type of mercury form we have  
2 because the mercury retort process is effective only for  
3 specific types of mercury forms.

4 AUDIENCE MEMBER: Was your risk assessment  
5 based on elemental mercury?

6 MR. OWEN: Yes, it was.

7 AUDIENCE MEMBER: And on your computer code,  
8 when and how was it validated?

9 MR. OWEN: The computer model was GW Screen.  
10 It is a standard computer code that has been used here at  
11 the INEEL, not at the Test Reactor Area but at other sites.  
12 Art Rude (phonetic) was the author of that code. Doug, are  
13 you familiar with the validation?

14 SPEAKER: Yes. It was validated back around  
15 1990. It was written up in several journals and it has been  
16 run through its paces pretty well.

17 AUDIENCE MEMBER: Who wrote the code?

18 SPEAKER: It was a local code developed here  
19 at the INEEL.

20 SPEAKER: It has been used at other sites as  
21 well.

22 MR. SMITH: Can everyone hear this exchange?  
23 If it's hard to hear, raise your hand. We have got some  
24 hand-held mikes we can pass around.

25 AUDIENCE MEMBER: Now, I understand when DOE  
is told to consolidate their acreage, that the most likely

1 candidate that is going to get it is BLM, and my question  
2 is, how come the federal government isn't involved in this  
3 process too, as so-called real estate holders.

4 MR. OWEN: When you say federal government,  
5 you mean, specifically BLM?

6 AUDIENCE MEMBER: I don't care who it is.  
7 As far as I can make out it was always federal ground.

8 MR. SMITH: Adam, let me just say, you have  
9 a legitimate concern here and if we can, we would like to  
10 maybe get with you at the break and talk about some of the  
11 land use issues that we are facing. We also have a comment  
12 form over here where we can take some specific issues, like  
13 land use and so forth and we can get an answer to your  
14 question. I am not sure we are prepared to go into all that  
15 detail right now. That will give me a chance to think about  
16 an answer for that one.

17 Are there any other questions of clarification before  
18 Nolan comes up to tell us what the agencies are recommending  
19 of these alternatives that have just been reviewed?

20 AUDIENCE MEMBER: I have a question. What  
21 is the considered to be the acceptable dose from radioactive  
22 materials from soils and waters to anybody that was exposed?

23 MR. JENSEN: I will take a stab at that and  
24 Doug can interject.

25 You remember that graph that --

MR. SMITH: Could you put that up?

1 MR. JENSEN: Can you put that up?

2 MR. OWEN: I will be honest with you. I  
3 don't know the specific dose number, but there are two  
4 things to consider.

5 MR. POETON: I can answer that.

6 MR. OWEN: Okay.

7 MR. POETON: I take your question to mean  
8 this one in ten thousand risk, what is that in terms of  
9 radiation dose and that would correspond to an annual  
10 radiation dose of approximately five millirems a year, which  
11 is a fraction of what an ordinary individual gets just  
12 naturally from background --

13 AUDIENCE MEMBER: One percent?

14 MR. POETON: It's not far from one percent.  
15 Three hundred millirem is typical background for an  
16 individual in a year and we are talking approximately five  
17 at the one in ten thousand.

18 AUDIENCE MEMBER: And the one in ten  
19 thousand means what?

20 MR. POETON: That is a lifetime incremental  
21 cancer risk. That means that over a lifetime of exposure,  
22 your risk of contracting cancer is increased by that  
23 exposure by one part in ten thousand.

24 AUDIENCE MEMBER: Is that one person in ten  
25 thousand?

MR. POETON: You can say one person --

1 AUDIENCE MEMBER: Is that the same thing as  
2 one person in ten thousand?

3 MR. POETON: If you exposed ten thousand  
4 people to -- I don't think that is exactly correct. A  
5 typical individual's risk of contracting cancer, in a  
6 lifetime, is 25 percent, 20 percent, something like that.  
7 It's a large number. So that is --

8 AUDIENCE MEMBER: So that is 2,500 parts of  
9 10,000?

10 MR. POETON: That is your individual risk.  
11 On top of that, exposure at this level would increase your  
12 risk by another one part in 10,000.

13 AUDIENCE MEMBER: It is .001 percent.

14 AUDIENCE MEMBER: So, out of a population of  
15 10,000 people, 2,500 of them are expected to get cancer, so  
16 that's 25 percent?

17 MR. POETON: Out of a population of 10,000  
18 people, you would expect 2,500 ordinarily to get cancer.

19 AUDIENCE MEMBER: That line you have got  
20 there, what does that mean in terms of deciding to do  
21 something, deciding to take action or not to take action?

22 MR. POETON: I think as Adam explained --  
23 and I don't want to hog the time here -- but as Adam  
24 explained, that's the line above which action is normally  
25 taken and below which action is ordinarily not taken.

AUDIENCE MEMBER: Is that line statute? Is

1 that a statutory line? Are you required by law to take  
2 action above that line?

3 MR. OWEN: The one in 10,000 is written in  
4 statute but it is not an exact line. There is a certain  
5 amount of judgement that can be applied.

6 MR. SMITH: Let me make a suggestion here.  
7 We have two or three people here who are risk assessors and  
8 perhaps we can take a minute in the Q and A session and  
9 explore that a little more if you would like and we can get  
10 some heads together and come up with some answers and try to  
11 cover that. Would that be all right?

12 AUDIENCE MEMBER: It would be all right  
13 provided that's going to be coming forth.

14 MR. SMITH: Yes. We can do that right here.  
15 What I would like to do is have Nolan explain which of those  
16 alternatives you had explained to you in the broad overview  
17 are favored by the agency, and he will come to a conclusion,  
18 tell you about some costs and so forth, and I have a little  
19 wrap-up I would like to give you at the end, and then we  
20 will open it up again for some general questions.

21 MR. NOLAN: So, sir, as to your question, we  
22 will get back to you. We don't mean to put you off.

23 As Adam said, that is the trickiest part of the  
24 presentation. That is an unusual concept to try to talk  
25 about.

What I am going to do now is talk specifically about

1 the last question that I mentioned at the beginning, and  
2 that is, okay, we know now generally how bad the risk is,  
3 what are we going to do about it, and as we talked, these  
4 eight sites are ones where we believe action needs to be  
5 taken. I will just go through those one at a time.

6 This is a picture of the Warm Waste Pond. This pond  
7 right here. This is a photograph. It doesn't look like a  
8 pond, obviously. The reason for that is about four years  
9 ago, that is the pond where we went in and consolidated the  
10 contaminated sediments and put a soil cover over it. But  
11 now what we are talking about is going in and putting a  
12 final engineered barrier and Adam showed you the slide a  
13 minute or two ago showing you the engineered barrier with  
14 the cobbles on top, that's the kind of design we would  
15 propose for a cap for that site.

16 This is the Cold Waste Pond. Again, it doesn't look  
17 like much of a pond because it doesn't have water sitting in  
18 it. Normally, it doesn't. Generally there is a little bit  
19 of standing water in this corner when they are discharging  
20 in the pond, but in this case the proposal is to excavate  
21 and dispose of the contaminants. We don't believe there is  
22 a large amount of contamination here that needs to be taken  
23 care of but we have detected some radioactive contaminants  
24 in the pond, so what we would most likely do is go in and  
25 find those hot spots and take them out. If the timing works  
out well, what we will probably do is put them in the Warm

1 Waste Pond and complete that cleanup so that everything is  
2 under that final cover we put over the Warm Waste Pond.

3 AUDIENCE MEMBER: The Cold Waste Pond is  
4 going to stay in operation the whole time?

5 MR. JENSEN: Yes. By the way, this is  
6 contaminated water that goes into this pond. There are  
7 actually two cells to the pond and one of them is in use and  
8 one of them isn't. We can go in and work with the pond that  
9 isn't in use. The contamination most likely got there from  
10 the wind blowing in the contaminated side of the Warm Waste  
11 Pond over to it, so once we get those out of there it  
12 shouldn't be a problem to continue operating the pond.

13 This is a photograph of the sewage lagoons. And, as  
14 you remember, the sewage lagoons were near the bottom of the  
15 line in that risk assessment line. What we are proposing  
16 here is that the low levels of contaminants in the pond just  
17 need a soil cover over them, so, what we are proposing is a  
18 soil cover and most likely we will just push the berm in on  
19 top of those ponds and cover them up. Before we go on, I  
20 don't think we have a slide of the area around these  
21 lagoons. Those contaminants, again, are barely above the  
22 risk level and within 100 years they will easily decay down  
23 into an acceptable level, so the proposal for the area  
24 around the pond is what we call Limited Action. In other  
25 words, in the decision, if we do this proposal, it would  
require that we maintain control of that site until the

1 decay takes it down to a safe level.

2         This is the Chemical Waste Pond. This is the one  
3 where Adam mentioned that there is mercury contamination and  
4 the proposal for this pond is an excavation of the  
5 contaminated soil and disposal and then follow that up with  
6 a covering on the pond. Again, this pond is still in  
7 operation so the actual covering up won't happen for some  
8 time. We are not actually certain when that pond will be  
9 taken off-line but it could be in the next couple of years.

10         This is one of the sites inside the fence, TR-15  
11 here, and I know it's not much to look at, but there is some  
12 radioactive soil contamination on the surface and, again,  
13 similar to the area around the sewage lagoons, the  
14 contamination is quite low, barely above risk levels, and  
15 for this site we are proposing we maintain control of that  
16 site and let it decay to safe risk levels in about 100  
17 years.

18         These other two sites, these pink spots inside the  
19 fence, is what we call the Brass Cap Area, and we call it  
20 that because there is a little brass cap in the concrete  
21 there marking the spot where there was a pipeline that  
22 leaked radioactive water into the soil, so in this case --

23                 AUDIENCE MEMBER: Is that by the retention  
24 basin?

25                 MR. JENSEN: No. I believe that door goes  
into the NCR Building and the hot shops are just right next

1 door to it. This one over here (indicating) that I talked  
2 about before was near the retention basin.

3       So, the proposal for this site -- maybe we should  
4 show the next one because these two proposals are the same -  
5 - this is an area shown in that previous slide only it is  
6 back around the corner -- in this area there are some  
7 underground storage tanks and there was some leakage from  
8 pipelines in this area, so, in both of these cases, the  
9 proposal is -- because of the operation we can't get in  
10 there and get to them right away, so the proposal is to  
11 maintain control of those sites. That is the Limited Action  
12 Alternative and as soon as we can get into them -- what we  
13 are writing into the proposed plan is a contingency that  
14 whenever we would lose control of those sites or whenever we  
15 could get to them, then we would go in and do the excavation  
16 and disposal of the contaminated soil.

17       And, again, hopefully -- we don't know for sure yet -  
18 - but we could get to them within a couple of years.

19       I would like to talk a little bit about the cost.  
20 Specifically --

21               AUDIENCE MEMBER: That is a picture looking  
22 north from the hot field?

23               MR. JENSEN: Yes.

24               AUDIENCE MEMBER: That's the valve complex  
25 that controls the flow in and out of the storage tanks?

              MR. JENSEN: Yes. And the hot cells.

1           There are probably a lot of you that understand the  
2 systems out there far better than I do.

3           This is a cost estimate. I would like to focus on  
4 this line right here because that is the capital cost  
5 estimate for doing what we just proposed for these eight  
6 sites. As you can see, the total cost racks up to about \$12  
7 million. I will explain how accurate that is now.

8           For the Warm Waste Pond cover it is about \$4 million,  
9 just under \$4 million. I think that is a pretty accurate  
10 estimate. The reason for that is we have done similar  
11 covers in the last two or three years at the INEEL and so we  
12 have a pretty good feel for what it would cost to do that.

13                   AUDIENCE MEMBER: Is that in 1997 dollars or  
14 --

15                   MR. JENSEN: Those are 1997 dollars.

16                   AUDIENCE MEMBER: Are they escalated?

17                   MR. JENSEN: They are escalated to the mid-  
18 point. The cap construction is expected to start and be  
19 pretty much completed in 1997, so those costs don't show  
20 much of an escalation.

21           So, that is a pretty accurate cost. On these other  
22 ones, these are upper bound costs, and the reason I say that  
23 is for each of these ponds we assume -- well, for the  
24 Chemical Waste Pond and the Cold Waste Pond -- we assume in  
25 the cost estimate we would have to excavate the entire  
bottom of the pond and we don't think that is going to need

1 to be done, but if it did need to be done that would be the  
2 cost of that.

3 For the Sewage Leach Pond, that cost assumes that we  
4 would bring material from off-site to build the soil cover  
5 but in reality we can probably use the berms that are there,  
6 so that would be a worst-case estimate for that.

7 For these remaining sites, these are all the  
8 estimated costs, if we had to go in and institute the  
9 controls that are necessary to maintain control of the sites  
10 and prevent exposure. However, as you can see, this is an  
11 ongoing, active facility and controls are essentially in  
12 place. Like Adam said, you don't let workers or people in  
13 and around those facilities without any control. What the  
14 proposal would be here is requiring in the Record of  
15 Decision that those controls do stay in place. But again,  
16 in terms of the estimate, it's probably going to be less  
17 than that. But, to be conservative and make sure we didn't  
18 underestimate costs, the cost of that work is about \$12  
19 million.

20 Then, what we did was we looked at -- because these  
21 sites are going to need ongoing monitoring -- for example,  
22 the perched water pond I talked to you about earlier, we are  
23 going to assume that is going to need ongoing monitoring.  
24 Also, to keep an eye on the caps to make sure they are being  
25 well-maintained and there isn't any problems there, maintain  
all the controls -- we did an annual cost for each of the

1 sites here, and those range from about \$16,000 to \$30,000  
2 for those. If you take those and assume that they last 100  
3 years, and then add them up, you come up with a grand total  
4 cost over 100 years of in the neighborhood of \$32 million.

5 AUDIENCE MEMBER: Your operating costs can't  
6 be estimated.

7 MR. JENSEN: I will let John answer that  
8 one.

9 JOHN: When we prepare these costs, we  
10 prepare several different numbers in order that DOE can do  
11 their planning. One is present value, which is the amount  
12 of money you would have to put in the bank right now if you  
13 wanted to bankroll everything that is going to go on out  
14 there.

15 We prepare a cost in current dollars, which is the  
16 cost you see up here. And we also do a strictly estimated  
17 cost which would account for inflation and doing this at a  
18 discount rate, meaning that we aren't making any money on  
19 what's in the bank. So, these are 1997 dollars.

20 AUDIENCE MEMBER: I thought you said a while  
21 ago that they were estimated at the mid-point of  
22 construction.

23 JOHN: The capital costs are escalated to  
24 the mid-point of construction from that estimated value.  
25 I'm sorry. I wasn't reading to the end of this line. The  
capital costs that are shown there are in 1997 dollars.

1 MR. JENSEN: Okay. So those are the  
2 estimates for these eight sites where we are proposing  
3 action. The remaining sites are sites where we are  
4 proposing No Action and I will show you about -- what -- six  
5 or seven slides of the sites that we are talking about.

6 This is an area called the North Storage Area. It is  
7 an area where different components were stored and there  
8 were some contaminants that had fallen off of them. We did  
9 some cleanup in that area in the past and we believe that  
10 that is safe now so we are proposing No Action at this  
11 point.

12 This is an injection well. Part of the contaminants  
13 in the aquifer, specifically the tritium, was injected down  
14 that well in the past, but the well itself is now used as a  
15 monitoring well and the well itself is not a problem.

16 AUDIENCE MEMBER: Tritium was never put down  
17 that well.

18 MR. JENSEN: Oh, it was not. See, I can  
19 even learn something myself.

20 Was chromium put down that well?

21 AUDIENCE MEMBER: No, it was not.

22 MR. JENSEN: Anyway, the well itself, we now  
23 monitor it and the well itself is not a problem, so the  
24 proposal itself is that the well itself doesn't need action.  
25 There will be an ongoing monitor of the well until action is  
proposed there.

1           This is what we call the Paint Shop Ditch. This is  
2 an area where there was a paint shop and over the years  
3 painters and maintenance crews disposed of paint waste,  
4 paint thinners and that kind of thing in the ditch and so we  
5 looked at that and are proposing No Action there.

6           This is just one of the construction rubble piles.  
7 There are several of them out there. We evaluated those and  
8 didn't find anything of significance there and so, again,  
9 that is another type of site that we are proposing no action  
10 for.

11           This is kind of an interesting one. In this area  
12 right here there used to be another one of these big pine  
13 trees and, as I understand it, when they prune the trees,  
14 all of the material that is taken out of the facility is  
15 screened for radioactivity and they checked and that one  
16 tree showed up to be radioactive. We went back in to try to  
17 find out what the cause was. We drilled some soil points in  
18 the area and found extremely low levels of radioactivity in  
19 that area so our best guess right now is that one of the  
20 roots of the tree may have tapped into a line somewhere but  
21 we basically did not find any contamination in that area.  
22 The tree, of course, was cut down and taken out of the area.

23  
24           That just gives you -- of course, there are 47 other  
25 sites but I didn't want to spend another hour on them but  
that gives you an overview of the sites we are proposing No

1 Action for.

2 MR. SMITH: Thank you.

3 Well, to give you a sense of where we go from here,  
4 we would like to open it back up now for questions and an  
5 answer session and, for purposes of clarification, we will  
6 go back to this gentleman's question about land use and  
7 maybe take that and then we will come back to the risk issue  
8 and we will open it up for other concerns.

9 But, before we do that, if you -- when we take the  
10 break, if you would like to meet with any of these agency  
11 representatives to get additional clarification before you  
12 make a comment, please feel free to do so. We would like  
13 you to know that the comment period for this project  
14 advertised as a 30-day comment period, beginning March 10  
15 and ending April 9 has been extended by 30 days. We had a  
16 request from a group and so it has been extended. It was  
17 announced in the paper this last weekend.

18 Sometime this fall, the agencies will issue their  
19 Record of Decision for this project. Included in that  
20 Record of Decision will be a response summary. For those of  
21 you that comment tonight, you will find the response by the  
22 agency and the description of how your comment affects the  
23 nature of the project and the action that they propose.  
24 Remedial action could begin as early as the spring or summer  
25 of 1998. So, we want you to keep in mind. If there are  
additional questions that come up after this meeting, in the

1 literature that we have handed out we have a 1-800 number.  
2 There is some information out on the Internet. The address  
3 is in the proposed plan. We hope that you will contact us  
4 and if a briefing is necessary, we will be glad to do a  
5 briefing on any of these things.

6 So, if the agency or project people would bring a  
7 chair up around the front here, and feel free to ask your  
8 questions. If you have a card that you want to hand in, I  
9 will ask the question for you or you are welcome to raise  
10 your hand.

11 So, let's take, if you don't mind, the issue of -- in  
12 fact, Nolan, did you have -- were you going to say something  
13 before I interrupted you?

14 Okay. Could we go back to the issue of the land use?  
15 Do you still remember -- I don't remember the question.

16 MR. JENSEN: I can talk about it a little  
17 bit.

18 I think the question was regarding who was going to  
19 keep control of this.

20 AUDIENCE MEMBER: It was my assumption that  
21 the INEEL was put on federal ground to start with. That's  
22 No. 1.

23 MR. JENSEN: That is correct.

24 AUDIENCE MEMBER: Now, I just heard or read  
25 someplace that the management project has told DOE that they  
have too many acres out here. You don't need them anymore.

1 So, the question comes up, who is going to be there, who is  
2 going to take over the land. Well, it's going to be the  
3 federal government again, not the state. So, what I'm  
4 trying to find out is why isn't the federal government in on  
5 this.

6 MR. JENSEN: That doesn't directly relate to  
7 this project but I can tell you a little bit about it.

8 That was a proposal by the Inspector General and they  
9 were suggesting that if the INEEL -- their proposal is that  
10 if the federal government excessed part of the INEEL, that  
11 it would save a fair amount of tax dollars. I believe that  
12 our position at DOE is that that is not the correct way to  
13 go. We do believe that we need to maintain all the current  
14 real estate there.

15 You are right, though. If, in the future, there was  
16 some land to be disposed of or excessed, if DOE gave it up,  
17 as I understand it, that would revert back to BLM, and if  
18 BLM chose then to dispose of it -- I don't know if dispose  
19 is the right word -- but excess it to the public, there are  
20 very strict procedures that have to be gone through for that  
21 to happen, and all of those things would have to be gone  
22 through before any land could actually be given up.

23 AUDIENCE MEMBER: Who at DOE decided you  
24 need all of those acres? You haven't got anything going now  
25 so who at DOE decided you need all of those acres?

MR. JENSEN: That I cannot answer.

1                   AUDIENCE MEMBER: You just said that someone  
2 at DOE said they wanted to keep it. So, I'm saying, who is  
3 that person?

4                   MR. JENSEN: I don't know, specifically. My  
5 understanding is that DOE's response to the Inspector  
6 General was that it was not going to save dollars to excess  
7 property and so DOE's position is that that should not  
8 happen.

9                   Jack, maybe you --

10                  MR. BARRACLOUGH: This occurred in the past,  
11 maybe 15 or 20 years ago, when the Bureau of Land Management  
12 came and said 893 square miles, at that time, is too many  
13 and we don't need it and we presented a lot of information  
14 of why a continuous block that large is there. It is just  
15 understood that INEEL has it. And, we prevailed then and  
16 the Bureau of Land Management backed off and backed away  
17 from it and did see the justification of having that much  
18 for future facilities and there are not that many places in  
19 the country where you can go and find a remote area like  
20 this that is owned by the federal government.

21                  The second thing is, in any of these proposals, they  
22 never wanted any of the land around the facilities -- so,  
23 something like the Test Reactor Area would never be -- they  
24 don't want the responsibility of it. They don't want  
25 contaminated land. My feeling all along is that this would  
be a wonderful place for the government to do research. We

1 tried to get the collider (phonetic) here. Unfortunately,  
2 Texas got that.

3 Still, the reason we are having that -- and the value  
4 of the land is really marginal unless you put water on it,  
5 and much of it is rocky or basalt outcrops at or near the  
6 surface. It is not really as choice a land as you think,  
7 and I personally strongly feel that it ought to be kept  
8 together as a block. Some of the land around the edges  
9 could be utilized but areas like this where there is already  
10 contamination, the Bureau of Land Management wouldn't want  
11 it if you gave it to them.

12 MR. SMITH: Does that discussion answer your  
13 question, sir?

14 AUDIENCE MEMBER: No. I am trying to find  
15 out who at DOE made this comment because I am trying to find  
16 out what you need that land for to start with.

17 MR. JENSEN: If you would take our blue  
18 comment form --

19 MR. SMITH: I would like to meet with you at  
20 the break so that I can capture -- I have a recorder, a  
21 little hand-held recorder -- and we can capture your concern  
22 --

23 AUDIENCE MEMBER: I would just like an  
24 answer.

25 MR. SMITH: We will get you the information.  
On the issue of risk assessment, did you have

1 something you wanted to follow up with on that. In fact, if  
2 we need to put one of those overheads back up, we can go  
3 back and review that.

4 AUDIENCE MEMBER: My ultimate feeling is  
5 that you are spending upwards of \$20 million to remediate a  
6 risk which you have assessed as being on the order of a few  
7 out of 10,000. That does not strike me as being wise use of  
8 \$30 million, because a few additional cancers out of the  
9 2,500 that you expect to see in a population of 10,000,  
10 cannot be determined. You cannot tell whether that is  
11 natural occurring events or that it came from some action  
12 that was reported or some action that was not reported. It  
13 is indeterminable and if it can't make a difference to the  
14 population, why do you spend money if it won't make a  
15 difference in the population? I would like to ask the  
16 agency this.

17 MS. UNDERWOOD: I would like to try to  
18 answer that.

19 The one in 10,000 that is up on that graph, that is  
20 really more of a reference point. There were a number of  
21 sites that were identified on that same graph or two  
22 different graphs, and risk levels, in some cases, are  
23 actually much greater than that. There are some that are in  
24 a one in 100 range. There are some in the one in 1,000  
25 range. There are only two that are more in that borderline,  
one in 10,000 level that you were referring to.

1 AUDIENCE MEMBER: Well, there is one -- SLP.  
2 MS. UNDERWOOD: That is the Sewage Leach  
3 Pond.  
4 AUDIENCE MEMBER: Right. That is non-  
5 radioactive. That is principally chemically contaminated.  
6 MR. JENSEN: Actually, the problem there is  
7 --  
8 AUDIENCE MEMBER: I thought you said it was  
9 mercury?  
10 MR. JENSEN: There is. There is mercury and  
11 there is radioactive contamination.  
12 AUDIENCE MEMBER: You are not saying that  
13 the mercury causes cancer? It is the radioactive material  
14 that causes cancer. What is the level of radioactive  
15 materials? What is the risk on radioactive materials only?  
16 MS. UNDERWOOD: Let me look that up for you  
17 very quickly.  
18 AUDIENCE MEMBER: Thank you.  
19 MS. UNDERWOOD: This is the present day  
20 occupational exposure. If you look at that, we are talking  
21 about a one in 1,000 chance.  
22 AUDIENCE MEMBER: We are talking about the  
23 radioactive risk only?  
24 MS. UNDERWOOD: Right.  
25 AUDIENCE MEMBER: I thought you said the  
total risk.

1 MS. UNDERWOOD: It's the total risk for the  
2 external radiation exposure only attributable to the  
3 radiation contamination and as Adam was explaining earlier,  
4 there are a number of concepts --

5 AUDIENCE MEMBER: And that's for residential  
6 or occupational?

7 MS. UNDERWOOD: That's for occupational.

8 AUDIENCE MEMBER: Oh, occupational exposure.

9 MS. UNDERWOOD: The one in 1,000 --

10 AUDIENCE MEMBER: The one in 10,000 line is  
11 for residential?

12 MS. UNDERWOOD: That one in 10,000 is  
13 actually used as a reference point for occupational and  
14 residential scenarios.

15 AUDIENCE MEMBER: Does that mean one cancer  
16 in 10,000?

17 AUDIENCE MEMBER: In 1989 they came out with  
18 a report and for the first time they came out with a price  
19 tag for life. They determined that for one rem of exposure,  
20 you would get one additional loss of life if you had 10,000  
21 people exposed to that one rem of exposure. Being a good  
22 nuclear worker, I'm the one exposed to that. That's how  
23 that was derived and that was something to put a handle on  
24 it and even in larger units, you would report it the same  
25 way. You would have 10 in 1,000 and so on.

MS. UNDERWOOD: I just wanted to say, and

1 maybe I am misunderstanding your concern, but I thought you  
2 were concerned about that one in 10,000 value and were  
3 thinking of the sites that we are taking action on here or  
4 are proposing to take action on, that those were really more  
5 borderline and that your concern was that the expenditure of  
6 dollars was unnecessary and what I was trying to point out  
7 is that in the sites we are looking at -- for example, here  
8 at TRA-19 and the Brass Cap Area, the disposal sites --

9 AUDIENCE MEMBER: Wait a minute, what. That  
10 was that block of concrete with the brass cap in it,  
11 commemorating the events that happened some years back.  
12 It's already cracked up.

13 MS. UNDERWOOD: Again, this is a category of  
14 sites, and we refer to the subsurface sites and the  
15 subsurface release sites and we refer to the subsurface  
16 disposal.

17 AUDIENCE MEMBER: Okay.

18 MS. UNDERWOOD: The point I am trying to  
19 make here is that the risk there is above one in 10 for the  
20 current occupational --

21 AUDIENCE MEMBER: That is not an  
22 occupational exposure. She is talking about an occupational  
23 exposure. Okay. Now you two get your stories straight.  
24 You haven't got your stories straight.

25 MR. OWENS: When you are talking about  
occupational exposure, it has to do with parameters in the

1 equation and if a person is there, whether it's 360 days a  
2 year or half that time or the number of hours, so those  
3 parameters are used as a measure of how much time a person  
4 is exposed to that contaminant. Whether it is residential -  
5 -

6 AUDIENCE MEMBER: And residential is on a  
7 continuous basis and that location there, that's not a  
8 residential location and cannot be a residential location  
9 until it is remediated. So, we are not talking about a  
10 residential exposure there. We are talking occupational and  
11 it will never be a residential exposure or be at that level.  
12 That's just simply not possible.

13 MR. JENSEN: We are saying that we do not  
14 think we should ever allow that to happen, and, therefore,  
15 we have to make sure --

16 AUDIENCE MEMBER: You are not legally  
17 permitted to let it happen.

18 MR. SMITH: Let's get refocused here. I  
19 think I have kind of gotten lost in the question and  
20 answer.

21 Is there another question you have, sir, that we  
22 could have the agencies answer fairly succinctly?

23 Then let me just ask, does anyone else have a  
24 question that they are working on that they would also like  
25 to ask? Don't hesitate.

Have we dealt with that issue that you were concerned

1 about, sir?

2 AUDIENCE MEMBER: I have a question.

3 MR. SMITH: Okay, Mr. White.

4 MR. WHITE: Well, I was looking at this  
5 action we were talking about, the windblown contamination,  
6 and where that occurred, and what stops the windblown  
7 contamination from moving on beyond as you remediate that  
8 particular area? I was thinking of the use of bentonite or  
9 something to lock the area down so the wind doesn't blow it  
10 around?

11 MR. JENSEN: In those cases, like the area  
12 around this pond, the lighter green, my written proposal  
13 for that area is that the contamination is low enough in  
14 concentration that -- no, we are not doing anything to  
15 prevent the wind from blowing it, but it is low enough that  
16 if the wind did blow it, it shouldn't be a problem. That's  
17 basically what we are saying.

18 Right in that particular area, we are saying that  
19 within 100 years, no problem at all. It will have decayed  
20 to acceptable levels so we should control that area for at  
21 least 100 years but the assumption is that anything that  
22 would blow away from that area right now is far less than  
23 what blew out of this pond and we have sampled all around  
24 that and didn't find anything that was of a level of concern  
25 and so our proposal is we don't think there is any need to  
control that at all. It shouldn't be a problem to just

1 leave it there, as long as we make sure that this area is  
2 controlled for the next period of time.

3 AUDIENCE MEMBER: Let me ask the question a  
4 different way. Is that the warm pond or the cold pond,  
5 that's his question, because you said it blew from the warm  
6 pond to the cold pond.

7 MR. JENSEN: Yes. Because the warm pond is  
8 the problem, we already consolidated it and put a layer of  
9 dirt over it. That will prevent anymore dust from blowing  
10 around and also take care of the radiation that was there.  
11 What we intend to do now is, like I said earlier, to look at  
12 areas in the Cold Waste Pond and find the areas that have  
13 radioactive contaminants that are above our levels of  
14 concern, pick those up, put them in here, and then put the  
15 final cover over it all. That is the most likely way we  
16 would take care of it.

17 MR. SMITH: Okay. Other questions?

18 Are there any other slides that we have reviewed  
19 tonight that you would like to take a look at again?

20 Okay. Be thinking about that for a moment and we  
21 will revisit that, but we will take a break here in just a  
22 few minutes, and if you need longer than five minutes during  
23 that break to prepare comments for the comment session, I  
24 will be glad to give you some extra time to put some  
25 comments together. Sometimes it's hard to come to a meeting  
and put your comments together before the presentation, and

1 so we want to make sure that you have had adequate time to  
2 think these things through and ask the questions that need  
3 to be asked.

4 So, this will be the last call for questions. Okay,  
5 a five minute break coming up here.

6 (BRIEF RECESS TAKEN)

7 MR. SMITH: We would like to reconvene and  
8 begin the comment portion of our meeting tonight. I checked  
9 the sign-up sheets at the reservation table and there are  
10 two individuals who have signed up to make comments tonight  
11 and we would certainly like to encourage others, that once  
12 you have heard comments and if you would like to make  
13 comments, we will take those at any time.

14 This is a portion of the meeting where essentially  
15 the floor is yours. We will turn the time over to you and  
16 we would ask that you state your name and give us your  
17 mailing address because we would like to send you a copy of  
18 the Record of Decision with the Responsiveness Summary. If  
19 you would -- I believe we can hear fairly well in this room,  
20 but if there is a problem, we will ask you to come up here,  
21 but for now, feel free to stand right where you are and we  
22 will try that way.

23 We will invite the agencies, as they listen to your  
24 comments, if there is something that they would like to  
25 clarify, after you are finished we will give them the  
opportunity to make a question of clarification, if

1 necessary. It may not be necessary.

2 This is a time when people won't be asking -- you  
3 won't be interrupted while you are giving your comment.  
4 This is your time.

5 I believe I have covered those issues. So, first of  
6 all, we would like to ask Representative Barracrough to  
7 please come forward.

8 COMMENTS

9 MR. BARRACLOUGH: Never give a serious  
10 politician a chance to get up and talk.

11 Just a little bit about my background. I worked part  
12 time at INEEL from Day 1 for the U.S. Geological Survey.  
13 And the focus of the job, the Survey being here, was -- from  
14 the Survey's standpoint -- was to find out how contaminants  
15 move in fractured rock aquifer.

16 The focus from AEC -- DOE -- was, what are we doing  
17 to the environment from our operations. And, the feeling I  
18 had since Day 1, in 1949, was, how can we operate these  
19 facilities without insult to the environment. It was before  
20 EPA and it was before Greenpeace and it was before Earth Day  
21 and all those things, but it was just a concept approach as  
22 to how we could do this with the least insult. I had no  
23 regulatory authority. I had no shame authority, if you  
24 will.

25 So, during this period, with a 10-year break to do  
water studies in Florida -- from 1949 to 1983, I worked on

1 every site, and since then I think I have worked on every  
2 other major facility DOE has, and I am a certified  
3 Professional Hydrologist, a graduate of the University of  
4 Idaho. I grew up in Boise. Five years ago I ran for the  
5 legislature so INEEL would have someone who knew what was  
6 going on there and to explain my views on the Snake River  
7 Plain Aquifer that I have studied and a lot of other water  
8 studies in Idaho.

9 Now, just because you winter a long time in your  
10 hole, that doesn't mean you know everything about  
11 everything. The Test Reactor Area has been one area that  
12 has been really special to me since Day 1, since we dug the  
13 first pond in 1952 and I have wondered about the process and  
14 the project. Some people say I am an apologist to the --  
15 for the site, and I don't realize what's going on and  
16 everything is rosy. To others, I am too well-spoken and too  
17 critical of the operations.

18 But, in these years -- this is my drawing from 37  
19 years ago. This is my drawing 37 years ago. I designed  
20 this pond. I designed this pond. I cleaned up the major --  
21 the disposal well work -- and discovered the shallow perched  
22 water and the deep perch zone and measured the effect on the  
23 aquifer.

24 I guess I get disturbed, as an old timer, I get  
25 disturbed when I hear the study started five years ago. The  
study started a long time ago and I have a pet peeve with

1 the DOE that somehow they refuse to use the old data. We  
2 knew 90 percent of what was said here tonight 30 years ago.  
3 We did modeling 20 years ago, yet it was never referred to.  
4 The good thing about it is the things we discovered and  
5 wrote about and did a lot of reports, are the same thing we  
6 are talking about now, so I will take that slight that our  
7 work is not appreciated and not utilized. So, with that  
8 scene and that background, I hope you will bear with me.

9       The important projects are the Chemical Waste Pond  
10 and the Warm Waste Pond. A reasonable person could make a  
11 good argument that we could walk away from the Test Reactor  
12 Area when it is shut down and do nothing and the insult to  
13 people would be very slight. But, that isn't my  
14 recommendation. My recommendation is that you concentrate  
15 on the Warm Waste Ponds, the 1952 pond, and 1957 and 1964  
16 and concentrate on the Chemical Waste Pond and you just need  
17 to do a covering. Or, you can find the hot spots and dig it  
18 up and that's all right, but I wouldn't concentrate much  
19 there (indicating) and I wouldn't concentrate much there  
20 (indicating). I am not going to speak about these  
21 (indicating), because I didn't work there and I don't have a  
22 good feel for that. Others can do that.

23       The deficiency I find and -- a prudent man, I think,  
24 would go to Alternative 3. And then I think you have got to  
25 do a little more analyzing of what this means. Do you want  
to contain it so it won't be windblown and cover it or do

1 you want to prevent any water from migrating downward --  
2 percolating downward -- into the shallow zone where there  
3 are contaminants or to the deeper zone in the basalt in this  
4 area (indicating) and the basalt in this area (indicating),  
5 and the perching zone here (indicating) and do you want to  
6 keep the waste from the Snake River Plain Aquifer. You  
7 could make a risk assessment -- and I would agree with some  
8 of them although not all of them -- but you make a lot of  
9 risk assessments, but the thing that your proposal really  
10 doesn't do is address the thing that bothers the people in  
11 Idaho, and that is how we are taking care of those  
12 contaminants and keeping them out of the aquifer.

13         The funny thing about some of INEEL's disposal -- 20  
14 years ago we looked at -- that you could pipe some of the  
15 waste over and discharge it into the Snake River and be  
16 within limits. You could discharge it into the air and be  
17 within limits and the part that would keep it out of man's  
18 environment longest is to discharge it into the Snake River  
19 Plain Aquifer. When requirements were lower -- and it has  
20 just completely turned around -- and it probably still is --  
21 but because of that technical or emotional feeling --  
22 neither one of your covers really does that. And if you  
23 think of what a cover should do, the only driving force --  
24 below the surface, below the windblown layer -- that's easy  
25 to cover as you have well-described -- but the only driving  
force is water.

1           In 1982, when they built these ponds, I begged them  
2 to move them about a half-a-mile south because of the avenue  
3 for driving this perched water down to the aquifer. If you  
4 thought of a cover and you think about below the surface and  
5 you want to use rip rap or cobbles or gravel, enough so  
6 people wouldn't want to dig there or animals wouldn't want  
7 to dig there and plants wouldn't find it very hospitable and  
8 then you need a series of things, like native soil or other  
9 gravels, but sooner or later you would want to get down and  
10 find a fine grain layer of silt and clay or something of  
11 that nature. That's what nature has done, and if you look  
12 at desert environments, the percolation that goes through  
13 the -- first, you start with the desert pavement and you  
14 don't get much infiltration, but then you go from that  
15 downward and you get three, five, seven feet to the zone of  
16 evaporation, and that's how that white calcium carbonate is  
17 formed in the lava rocks. When you dig them up you see this  
18 white layer, and that means the snow melt and rain, water  
19 from Big Lost River, water from man's use, goes down there  
20 and it is retained there and it develops this fine layer,  
21 and then it develops this beluchi (phonetic) layer, and the  
22 water evaporates and there is little or no percolation down  
23 there. The only thing you have to do is go into the desert  
24 anywhere and dig down 15 feet to see fossil beluchi layers,  
25 younger beluchi layers, and then you put water on that and  
it just doesn't go very far.

1           And my recommendation would be to put a geo-fabric of  
2 some kind that is impregnable and so you would have the  
3 lateral movement, the run-off to the side, not going through  
4 the contamination here, here, all the way down to the  
5 aquifer. That would gain a lot more public acceptance than  
6 either one of them. So, if you had -- if I had to choose  
7 between 3A and 3B, I would put them together and make a  
8 really better cover than that.

9           Now, we did modeling, and I think one of the most  
10 dangerous things -- and you had a comment about codes and  
11 how were they verified -- when Jack Robinson, who worked for  
12 me in 1977, published his modeling report, we verified it by  
13 going back to the historic data, done in the 50's and 60's,  
14 and duplicated those same levels -- in this segment and this  
15 segment and this segment -- and then you have some  
16 confidence that your model has some validity and that you  
17 are dealing with the actual situation.

18           Again, I can't stress -- and it means nothing to me.  
19 I am retired and I have found a new life with a part time  
20 job in Boise. But, it means a lot that you should go back  
21 and look at the wisdom of the Geological Survey -- not just  
22 mine but many others -- started putting in those reports in  
23 the early 50's , and I think a great amount of time is not  
24 spent on those. Then tie it in with the last five or six  
25 years, and you will find that the data and the conclusions  
are very similar and I shoot this shot at almost every

1 facility of these new WAG groups that their arrogance is  
2 that the project started when they got here. The waste  
3 didn't start when you got here five years ago or 10 years  
4 ago or three years ago. The waste has been here and you  
5 need the whole history of what happened there and that's why  
6 people are so valuable, because they know what happened  
7 there and I think there is not enough communication for  
8 people that know what the operation was.

9       Maybe it is easy when you are an old timer in history  
10 that you would take cheap shots like that, but it's the way  
11 I feel. But, there is a lot of help there, and it's not all  
12 of it just a 1991 model.

13       Another thing is, any modeling you do, make sure it  
14 makes sense. We had a model that showed that the RWMC was  
15 not going to get to the aquifer in a thousand years. And I  
16 said, well, if it isn't going to get there for a thousand  
17 years, then how can you get contaminants in 15 years. You  
18 need to tie the modeling in.

19       One other thing we learned is -- and I was wrong --  
20 no tritium ever went to the TRA deep disposal. It was 1,275  
21 feet deep. It was never discharged there. But hexavalent  
22 chromium was. We did some selective perforations and  
23 restored it and in 1964 they did use cold waste and  
24 hexavalent chromium. Hexavalent chromium is used as a  
25 corrosion inhibitor. When I found hexavalent chromium in  
1966, above drinking water, I said, this is going to be a

1 contaminant. I mean, this is a contaminant. This is  
2 something we have got to deal with.

3 I gave them the name of St. Regis Paper Company in  
4 Pensacola, in Northern Pensacola, where a chemist there told  
5 me about this polyphosphate and they contacted him and in  
6 1972 they started using the polyphosphate instead of  
7 chromium. But still, six years is a good time, from 1966 to  
8 1972, when you don't have any clout, other than shame.

9 We had hexavalent chromium a half-a-mile south here  
10 in Well 65, and we wondered whether that had only come from  
11 the disposal well or whether or not it had actually come  
12 through this system, and chromium was discharged in three  
13 different places, as I remember. We had a few archive  
14 samples that we collected in 1963, before this well was  
15 fixed, before there was any discharge to it, and we found  
16 that the chromium had moved from the pond, through this  
17 system, the aquifer and a half-a-mile south by 1963, so it  
18 pre-dated the well and you knew what was going through  
19 there.

20 Now, it is funny, there is a pretty good level of  
21 strontium 90 which hasn't been discussed here. Cesium has  
22 never been detected here as far as my -- my information may  
23 not be correct -- so it really is not very mobile.

24 But, the thing is, I think when you are doing these  
25 studies, you want to do them as technically sound as you  
can, use all the available information that is there, make

1 them as defensible and answerable to the public, because  
2 that is the final thing.

3       And, then, I would like to say this -- drinking water  
4 samples. We have hassled about the risks and concerns. The  
5 EPA criteria -- and correct me if I am wrong -- is if you  
6 drink water, tritium in water, with 20 per liter, for  
7 several years, and the only source of your water for  
8 showering and drinking and watering and gardening and  
9 everything, and that is the only source of your water, and  
10 you drink two liters a day, in 70 years -- one in a million  
11 people do that -- one will develop a cancer. Not die from  
12 cancer, but develop a cancer.

13       At the same time, there is different statistics.  
14 Some say 280,000 of those million people will develop  
15 cancers and some say 220,000 will die from it. But, that's  
16 kind of in the one-in-four neighborhood. So, your levels  
17 and your risk are unbelievably low, and I would like to see  
18 someone that would live out at the Site for 70 years and use  
19 that as their only drinking source, never go on vacation,  
20 never leave on Saturday or Sunday. But, you see, there are  
21 a lot of safety factors built into these risks, and I would  
22 submit that that becomes part of the concern, is how  
23 realistic are these numbers and who is really going to live  
24 there and who is going to eat dirt if you are worried about  
25 windblown.

      To me, the amount of mercury here wouldn't be much of

1 a concern either if we just do some form of isolation so it  
2 isn't open for windblown and it isn't open for transport or  
3 people mingling with that waste and we concentrate our  
4 effort here at the Chemical Waste Pond. A lot of bad actors  
5 were discharged in the Chemical Waste Pond.

6       Then, on the other thing, the fact that tritium --  
7 and if you look at the concentration graphs of almost  
8 anything at INEEL, it starts out below detection limit and  
9 as the waste increases it usually comes up to a peak. As we  
10 pointed out the levels, and they made changes in many areas,  
11 then it starts dying off. The hexavalent chromium that is  
12 available in the aquifer in one or two wells -- it used to  
13 be only one well that was above drinking water -- the data,  
14 just like we predicted in our modeling, shows it tailing off  
15 and dying.

16       The tritium, with seven half-lives, you won't see  
17 very much of it -- which is 85 years -- or with 10 half-  
18 lives, which is 125 years. It really wouldn't be  
19 detectable. So, it's never -- the contaminants in the  
20 aquifer are never going to get to Thousand Springs.  
21 Anything INEEL does is never going to contaminate Shoshone,  
22 the area 70 miles south of the Site, they just won't show up  
23 because the process wouldn't allow it. Modeling shows that.  
24 Logic shows that. The extensive data that has been  
25 collected since Day 1 shows that. So, the thing you want to  
do is concentrate on making sure that you have come up with

1 the best solution within the Test Reactor Area that would  
2 give high public confidence that you know what you are  
3 doing, that you have made the right choices, that you have  
4 buy-in from the State and buy-in from the EPA, and that you  
5 are all playing from the same sheet of music, and you will  
6 do it for the least cost possible.

7 I agree with the comment there, some of this is  
8 overpriced. But, I would build a better cover. I have had  
9 the opportunity to be an advisor at every other facility,  
10 and I have built a lot of covers and I think these are a  
11 good start but I don't think they are adequate.

12 Thank you very much.

13 MR. SMITH: Thank you.

14 Mr. White, would you like to give your comments?  
15 And, following Mr. White, we will ask anyone else if they  
16 would like to offer comments also.

17 MR. WHITE: Well, I think, knowing Jack over  
18 the years, I put a lot of confidence in what he says.

19 MR. SMITH: Charlie, would you state your  
20 name and address, please?

21 MR. WHITE: C. E. White, P. O. Box 50616,  
22 Idaho Falls, Idaho 83405. I am on about 18 mailing lists  
23 already, so I will probably get a --

24 I would like to reiterate one thing particularly that  
25 Jack brought up and that is the type of cover that we are  
advocating. I have been involved with covers and trying to

1 isolate things in the desert, with ranches and what have  
2 you, and the cobbles and this sort of thing are fine, but  
3 there is nothing that prevents water or snowmelt from going  
4 down and I think that's the key. It's not what filters in  
5 from the air. It's what the water does and goes through.  
6 I know years ago -- I'm sure there's something better now --  
7 we used bentonite seal covers.

8         And, also what Jack pointed out about tapering these  
9 things off and having some sort of an impervious zone and  
10 tapering off so you are beyond where the contamination is  
11 found is what it is going to take to make sure that we don't  
12 get anymore of this stuff all the way down to the bottom.  
13 And I am not sure we are going to get it down to the bottom  
14 anyway. It's -- there is such a small amount of it that is  
15 down to that aquifer right now that, as Jack points out, the  
16 people down south who are saying we are going to get it in  
17 springs -- it's not every going to come out down there. Not  
18 unless we do something stupid like keeping on pumping stuff  
19 in the damn wells. Even, with the kind of material that we  
20 have here, that this goes through when it traverses to the  
21 south, with the kind of -- it's almost a natural sponge or  
22 filter, because it isn't solid rock. There are hundreds of  
23 little fissures, or thousands of them, every cubic meter,  
24 which acts as a natural filter.

25         But, to get back to Jack's point, the people here who  
have been traumatized -- people like the Snake River

1 Alliance -- think we are all going to die one of these days.  
2 I think that is what should dictate what kind of a cover we  
3 do and I think we do need a better cover rather than the  
4 cobble -- all of that stuff is impervious -- or pervious.  
5 It filters through. Of course, you can ruin it, if the  
6 kangaroo rats drill a hole or whatever, but I just think we  
7 need to cover better and make sure that our drainage away  
8 from there is sufficient that we get rid of it.

9 Thank you.

10 MR. SMITH: Are there any others who would  
11 like to make a comment tonight?

12 MR. MCCARTHY: My name is Jason McCarthy and  
13 I work at the INEEL and I do modeling like this. My comment  
14 is along the risk assessment line. It has always bothered  
15 me you have these rules, one out of four, one out of six  
16 risk, for the decision making. But, where does the  
17 probability of whether you will actually have a receptor  
18 there come into the process? I mean, they seem to be quite  
19 different things to me, but legally they seem to be the same  
20 thing. I know in baseline risk assessment you don't take  
21 that into account. Is there somewhere in this process where  
22 that information is taken into account?

23 MR. SMITH: Let me just make a footnote. We  
24 are still in the comment portion of the meeting and I would  
25 just like to -- does anyone else have a comment that they  
would like to make before his question is answered? We will

1 answer your question, but we want to be clear that this is  
2 comments for the record.

3       Seeing no hands and no further comments, let's go  
4 ahead and answer the question.

5               SPEAKER: You have got a valid point. We do  
6 start our risk assessment off making the assumption somebody  
7 will live out at the Site and that's an assumption that is  
8 made for risk assessment purposes. It's just -- we use it  
9 as a starting point for our risk assessment and the reason  
10 we make that assumption is that it is a very conservative  
11 assumption. If we can protect a resident out at the Site,  
12 then we can feel pretty comfortable that we can protect  
13 other non-residents, true, realistic receptors, I should  
14 say.

15       So, we start with that assumption, and it is a strict  
16 assumption that somebody will live there, but we have to  
17 start somewhere.

18               AUDIENCE MEMBER: It goes back to what we  
19 are willing to pay to save a life. And, if you don't  
20 incorporate that probability, then you can't make a  
21 calculation if I spend \$4 million or \$12 million on one  
22 waste pond, then how many people am I going to save for my  
23 \$12 million. It seems that the public has got to know, if  
24 you have five sites and you are going to spend X-1 on this  
25 one and X-2 on this one, and for each one what is the risk  
reduction per million dollars. That would give a feeling

1 for how the money is being spent.

2       You appeared to show a very high risk for the brass  
3 cap portion, which has a fairly low cost to clean up. You  
4 get big risk reduction and bang for your buck, put it that  
5 way. There is more risk reduction there than on some  
6 others. But, in order to make that calculation, you really  
7 have to make the probability that you really have a  
8 receptor. It's hard to make that calculation. It seems  
9 like that's an important piece of information before you can  
10 responsibly spend taxpayer's dollars.

11               SPEAKER: Your point is well-taken. Coming  
12 up with that estimate for how likely it is for someone to  
13 live out at the Site, but that estimate is dependant upon  
14 your perspective or my perspective, whoever happens to be  
15 making that estimate, and that is one of the reasons we are  
16 here, to try to look at the costs we are proposing and  
17 trying to ask the question, is this a reasonable amount of  
18 money to spend on the assumption that there will be somebody  
19 living out at the site. Are we spending too much money or  
20 spending a reasonable amount of money. That is a question  
21 that has to be answered through discussion. I wouldn't want  
22 to be responsible for that answer all by myself.

23               MR. WHITE: Well, I just wanted to say,  
24 maybe three or four years ago, when we had the land use  
25 committee -- three years ago, okay -- we had -- and I can't  
remember where it was now -- but we got to the same point

1 you did and that is, well, how much do you want too spend  
2 and that was kind of a jagged question when you ask it like  
3 that. We ended up like you.

4 I hate like Hell to make that decision, because it's  
5 hard, whether it's somebody else or it's you. It's hard. I  
6 know we talked about what the uses would be. There were  
7 certain areas that you would probably never have as  
8 residential. There were certain areas that would be grazing  
9 and this sort of thing. I even said that I felt one of  
10 these days I felt we were going to grow to the point that we  
11 were going to put an airport out there and have a bigger  
12 space to land airplanes, jets and things.

13 We had a study on 25, 50, 75 and 100 years, what  
14 would we do at each of these points. How far do you go. We  
15 ended up with 100 year argument and that is still carrying  
16 through now. I think it is a result of our committee  
17 kicking this around and deciding what we -- what is a  
18 parameter to follow. I still see a hundred years and that's  
19 what we came up with three years ago. Some of the people  
20 who took over from Bill and it was absorbed in their  
21 operation. We had all the graphs. But I don't think you  
22 can say, well, how much is it going to cost for each life  
23 you save. I don't know. Maybe I am being unrealistic, but  
24 I think we made the mess and we have got to clean it up.

25 SPEAKER: Just a quick follow up. There is  
two phases and one is risk assessment. And there is

1 guidance that provides equations and the duration and the  
2 assumptions that we use to assess the risk and part of that  
3 goes into -- you know -- how many days we are exposed.

4         So, we go through the assessment process, and then  
5 the second phase is risk management, and from the Lockheed-  
6 Martin perspective, it is prudent for us to provide the risk  
7 assessment based on the guidance we are given for these  
8 durations and parameters, and then we, based on that risk  
9 assessment, provide that information to the risk managers,  
10 and it is in their court at that time to determine the  
11 probability or the reasonableness of those assumptions that  
12 were made in the risk assessment.

13         If that is a concern, those folks are here and they  
14 will listen to your concern and factor those concerns into  
15 this.

16                 AUDIENCE MEMBER: The comment I wanted to  
17 make was water on the Snake River Plain has to have a water  
18 source. Perched water doesn't just normally occur and they  
19 are dynamic bodies. They will never be there a hundred  
20 years. The more bodies you put in that area, the larger the  
21 perched zones are going to be. That is demonstrated by the  
22 perched water in the alluvium and by the perched water in  
23 the basalt. When you stop disposing, within a limited  
24 amount of time, the perched water is going to go away.

25         The second thing is, in case someone thought my  
comments were too sarcastic and negative, I am very pleased

1 to see this process going on and we are solving another  
2 problem at INEEL. That's the way I see the project. I may  
3 have shifted some of the details, but solving another  
4 problem and removing it from the concern of the public is  
5 the good part of this.

6 MR. SMITH: Do you have a comment?

7 AUDIENCE MEMBER: I was just wondering if  
8 you considered the cover as was suggested by Jack and Mr.  
9 White and if you have, why that wasn't selected?

10 MR. OWEN: I really want to respond to that  
11 but I'm not sure of the formality of the response. I can  
12 say that I was deficient in pointing out in my presentation  
13 that as part of the modeling effort at these sites that we  
14 evaluated, given a certain infiltration rate, these  
15 contaminated source areas. Will -- given that infiltration  
16 rate -- will there be an adequate driver to get these  
17 contaminants in the aquifer. Based on that modeling, in no  
18 case, at any of these sites, did the model predict that any  
19 of these contaminants that are currently in place will make  
20 it to the aquifer. So, that was an important consideration  
21 when we evaluated the two zones. Since migration of  
22 contaminants to the aquifer was not going to be a problem,  
23 then the focus of those designs was to inhibit exposure of  
24 those contaminants by someone digging there or inhalation of  
25 those contaminants or dermal contact, not necessarily  
preventing migration of those contaminants to the aquifer.

1 AUDIENCE MEMBER: Was that decision based on  
2 annual rainfall or what?

3 MR. OWEN: That decision was based, I  
4 believe, an average of 10 centimeters per year, an  
5 accumulation of snowmelt and/or precipitation.

6 AUDIENCE MEMBER: Everything we built we had  
7 to design for the 100 year flood, so is there two different  
8 sets of criteria?

9 MR. JENSEN: He is asking about the 100 year  
10 flood, and that is an issue but, also, a 100-year flood only  
11 happens every 100 years.

12 AUDIENCE MEMBER: Well, we have been there  
13 50, so in another 50.

14 MR. JENSEN: Those of you who are modelers  
15 jump in anytime, but it takes a long time to drag  
16 contaminants to the aquifer, and since the flood doesn't  
17 happen but periodically, say every 100 years, this is not a  
18 significant issue in evaluating contaminants percolating.  
19 Most of the studies that have been done show less than 10  
20 centimeters a year as an average infiltration rate so 10  
21 centimeters a year is probably a conservative estimate over  
22 the long term.

23 What I should say , is not that we don't consider it  
24 at all and do when we build these caps, so if there is a  
25 flooding event -- for example, within the last 30 or 40  
years there have been flooding events, and I believe they

1 have all been associated mostly with a rapid snowmelt in  
2 February when the ground is still frozen or something like  
3 that, but we need to make sure that those covers are  
4 designed so the water won't sit in that area. It needs to  
5 be designed so it will run off.

6 AUDIENCE MEMBER: The snowpack in 1965 was  
7 235 percent of normal. We did have the highest flows on  
8 INEEL since we have been there. In 1952, I recommended a  
9 diversion from the Big Lost River or we would have had  
10 flooding then. The model doesn't tell you that those  
11 sediments have been deposited by the Big Lost River.

12 In geology, you don't say will it happen, you say  
13 when it happens. Again, sometimes models are a wonderful  
14 tool, but they are not the only tool. Those models don't  
15 have any geopolitical aspects.

16 MR. JENSEN: One other point also is the key  
17 contaminants are cesium 137 and we haven't found those to be  
18 migrating and at the time they were deposited -- I can't  
19 remember the number for the amount of water that was going  
20 into the pond at that time -- but it was millions of gallons  
21 of it going into the pond, so if that driving force didn't  
22 push the cesium down, then even the 100-year flood isn't  
23 going to do it. So that is another reason why the cap isn't  
24 there. We aren't really designing it to prevent  
25 infiltration as much as we are preventing someone getting in  
there.

1                   MR. SMITH: I would like to -- if some of  
2 you would like to stay afterwards and visit with us about  
3 some of these points, feel free to.

4                   I would just like to mention maybe two things. On  
5 the -- we have some comment forms on this project that are  
6 over by this last basket on this table. The comment period  
7 does end May 9 and feel free to take a supply of these if  
8 you are aware of other people who would like to comment on  
9 this project. Take those with you and you can mail those  
10 back in.

11                  Also on the back of the proposal there is a comment  
12 form, no postage required, and you can send that back in to  
13 us.

14                  Also, on the back of the agenda tonight, there is an  
15 evaluation form. Because we will be doing another eight  
16 meetings, we would like your feedback, if you have time  
17 tonight, or if you would like mail this back, on how this  
18 meeting went. It goes from the time you received notice,  
19 the presentations, the way we have had the interaction, how  
20 responsive you feel we have all been tonight, that kind of  
21 feedback will help us with future activities.

22                  With those footnotes, I would just ask, in closing,  
23 are there -- is there anyone else that would like to comment  
24 while we are still here in this kind of forum with our court  
25 reporter?

AUDIENCE MEMBER: Only one. The strontium

1 issue. Why was that not identified as well as the cesium?

2 MR. JENSEN: I can't remember how the  
3 strontium came out in the risk assessment. Was that on our  
4 list of contaminants?

5 MR. OWEN: It was on the list but it wasn't  
6 highlighted. There is strontium there but I don't believe  
7 they were detected in the aquifer. They never made it to  
8 the aquifer. It is an issue. We know it's there.

9 MS. UNDERWOOD: The strontium 90, if I  
10 remember, was detected in the deep perched and as part of  
11 the monitoring we are doing out there, we are looking for  
12 the strontium 90. Once it gets down there, it will be  
13 detected.

14 AUDIENCE MEMBER: You wouldn't expect cesium  
15 to move and as far as I know, it has never even been  
16 detected in shallow perched. Strontium has been detected  
17 since 1964 in the deep perched. It is more mobile.

18 MR. SMITH: Okay.

19 Thank you for being here. We appreciate the fact you  
20 have been here tonight. We will adjourn at this time.

21 (MEETING ADJOURNED AT 9:20 P.M.)  
22  
23  
24  
25

1 REPORTER'S CERTIFICATE


2  
3 STATE OF IDAHO )  
4 County of Bingham ) ss.

5  
6 I, LINDA STEFFLER, C.S.R., a Notary Public in  
7 and for the State of Idaho, do hereby certify:

8 That the foregoing INEEL Meeting was taken down  
9 by me in shorthand at the time and place therein named and  
10 thereafter reduced to typewriting, with corrections made by  
11 me and under my control.

12 That the foregoing is a true and correct copy  
13 of said proceedings.

14 WITNESS MY HAND AND SEAL this the 7<sup>th</sup> day of  
15 October, 1997.

16  
17   
18 Linda Steffler, C.S.R.,  
19 Notary Public in and for the  
20 State of Idaho, residing at  
Blackfoot.

21 (SEAL)

22 My Commission expires 2001  
23  
24  
25